Facility Name: **U.S. Silica Company**
City: Millen
County: Jenkins
AIRS #: 04-13-165-00012 Application #: TV-641704

Date SIP Application Received: n/a
Date Title V Application Received: March 7, 2022
Permit No: 3295-165-0012-V-03-3

Program	Review Engineers	Review Managers
SSPP	S. Ganapathy	Hamid Yavari
SSCP	William Fleming	Daniel Slade
ISMU	Ray Shen	Dan McCain
TOXICS	n/a	n/a
Permitting Program Manager		Stephen Damaske

Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and proposed operating permit amendment. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1) and 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the EPA review process will be described in an addendum to this narrative.

I. Facility Description

A. Existing Permits

Table 1 below lists the current Title V permit, and all administrative amendments, minor and significant modifications to that permit, and 502(b)(10) attachments.

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Description
3295-165-0012-V-03-0	February 25, 2019	Administrative Permit Change. Name and Ownership change
3295-165-0012-V-03-1	May 31, 2019	Significant Modification with construction- Introduce two new products to be produced along with the associated equipment and remove previously permitted equipment that were not needed or never installed.
3295-165-0012-V-03-2	February 24, 2021	Minor modification with construction - added a new crusher, feeder and surge hopper. Modified existing conveyor and bucket elevator incorporate operational process changes.

B. Regulatory Status

1. PSD/NSR/RACT

Currently the facility's potential emissions for all NSR-regulated pollutants will be less than the major source threshold of 250 tpy. As such, the facility will be a true minor with respect to PSD regulations.

2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	✓			✓
PM_{10}	✓			✓
$PM_{2.5}$	✓			✓
SO_2	✓			✓

VOC	✓			✓
NO_x	✓	✓		
CO	✓	✓		
TRS	N/A			
H_2S	N/A			
Individual HAP	✓	✓		
Total HAPs	✓	✓		

II. Proposed Modification

A. Description of Modification

U.S. Silica is proposing to install and operate one raw material sand silo and associated conveying equipment to allow for increased storage required in part by potential transportation and supply chain issues. The proposed silo will store raw sand and the conveying equipment will be used to transfer the sand between the new silo and other process equipment. Emissions from the new equipment will be controlled by existing control devices.

In addition, U.S. Silica is requesting several nomenclature changes due to errors in the current version of the permit. U.S. Silica submitted a 502(b)(10) change letter on July 29, 2021 to incorporate an existing baghouse into the Title V permit. However, the nomenclature used for the baghouses in the permit needs to be updated as follows in order for it to be listed correctly:

- The baghouse identified as GPB1 should be named Kiln No. 1 Green Pellet Nuisance Dust Baghouse 1.
- What was originally identified as GPB2 in permit 3295-165-0012-V-03-1, that has KCE2, KPS2, KQC5, KQC6, KCS3, KCS4, and COSC1 vented to it, should have originally been named KNB2 which is the Kiln No. 1 Cristobalite Nuisance Baghouse 2.
- Thus, baghouse GPB2, which should be named Kiln No. 1 Green Pellet Nuisance Dust Baghouse 2, noted in the July 29, 2021 502(b)(10) is the correct baghouse that the following equipment is vented to:
  - Weigh Belt Feeder #1 (WBF1)
  - Weigh Belt Feeder #2 (WBF2)
  - Kiln No. 1 CRG Feed Bin No. 1 (KFB1)
  - Kiln No. 1 CRG Refire Bin (KRB1)
  - Kiln No. 1 Feed Conveyor (KFC1)
  - Kiln No. 1 Cristobalite Feed Bin No. 1 (KFB2)
  - Kiln No. 1 Cristobalite Feed Bin No. 2 (KRB2)
  - Kiln No. 1 Cristobalite Feed Bucket Elevator (KRE2)

- Kiln No. 1 Cristobalite Silo Conveyor (KFC2)
- Kiln No. 1 Cristobalite Mixer Feed Conveyor (KM2)
- Kiln No. 1 Cristobalite Flux Mixer (KM3)
- Kiln No. 1 Cristobalite Weigh Belt Feeder No. 1 (WBF3)
- Kiln No. 1 Cristobalite Weigh Belt Feeder No. 2 (WBF4)

Table 1
Proposed Equipment

EQUIPMENT ID	EQUIPMENT DESCRIPTION	CONTROL DEVICE
206-SIL-840	Raw Sand Silo 2	CSB1
206-BCV-835	Raw Sand Transfer Conveyor	GPB2
206-BCV-855	Raw Sand Feed Belt Conveyor 1	GPB2
206-BCV-860	Raw Sand Feed Belt Conveyor 2	GPB2

Exhaust from the new silo will be routed to existing Kiln No. 1 Cristobalite Silo Bin Vent (CSB1). Exhaust from the new conveying equipment will be routed to existing Kiln No. 1 Green Pellet Nuisance Dust Baghouse 2 (ID GPB2, Stack ID S014) for particulate control.

B. Emissions Change

Table 3: Emissions Change Due to Modification

Pollutant	Is the Pollutant Emitted?	Net Actual Emissions Increase (Decrease) (tpy)	Net Potential Emissions Increase (Decrease) (tpy)
PM	✓	24	24
PM_{10}	✓	16	16
$PM_{2.5}$	✓	5.2	5.2
SO_2	✓	0	0
VOC	✓	0	0
NO_x	✓	0	0
CO	✓	0	0
TRS	N/A		
H_2S	N/A		
Individual HAP	✓	0	0
Total HAPs	✓	0	0

C. PSD/NSR Applicability

The facility is minor source under PSD regulations. The proposed addition of a sand silo and two conveyors is not a modification under NSPS or NESHAP. The increase in $PM/PM_{10}/PM_{2.5}$ emissions is less than the PSD significant threshold for an existing PSD minor source. The facility will continue to be a PSD minor source for all PSD pollutants after the proposed modification. Therefore, the proposed modification is not subject to a New Source Review (NSR) under the PSD rules.

III. Facility Wide Requirements

Not applicable.

IV. Regulated Equipment Requirements

A. Brief Process Description

U.S. Silica Company is proposing to install and operate one raw material sand silo and associated conveying equipment to allow for increased storage required in part by potential transportation and supply chain issues. The proposed silo will store raw sand and the conveying equipment will be used to transfer the sand between the new silo and other process equipment. Emissions from the new equipment will be controlled by existing control devices.

In addition, U.S. Silica is requesting several nomenclature changes due to errors in the current version of the permit. However, the nomenclature used for the baghouses in the permit needs to be updated in order for it to be listed correctly.

There is no change to the existing processes i.e. the Cool Roof Granules (CRG) and the Cristobalite process at the facility. The facility is just increasing the amount of sand stored for added flexibility. Emissions from the sand silo and the two conveyors will be controlled by existing control devices (i.e. Bin vent and Baghouse).

B. Equipment List for the Process

Emission Units		Specific Limitations/Requirements	Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	ID No.	Description
SD01	Spray Dryer No. 1	391-3-1-.02(2)(b) 391-3-1-.02(2)(g) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart UUU 112(g) case-by-case MACT, 40 CFR 63, Subpart B	SB01, SB02, SB03, SB04	Baghouses
SD02	Spray Dryer No. 2		SB05, SB06, SB07, SB08	Baghouses
KLN1	Kiln No. 1	391-3-1-.02(2)(b) 391-3-1-.02(2)(g) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart UUU 112(g) case-by-case MACT, 40 CFR 63, Subpart B	KB01, KB02, KB03, KB04	Baghouses
			137	Emergency Exhaust Damper
DSB1	Spray Dryer No. 1 Feed Bin	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	GPB1	Baghouse

DUB1	Spray Dryer No. 1 Unders Bin	391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO		
DSB2	Spray Dryer No. 2 Feed Bin			
DUB2	Spray Dryer No. 2 Unders Bin			
BEC1	Kiln No. 1 Bucket Elevator Conveyor			
GTC1	Green Pellet Transfer Conveyor No. 1			
GEC1	Kiln No. 1 Green Bucket Elevator			
GPE2	Rescreen Bucket Elevator			
CH1	CRG Hopper No. 1			
CSC1	Green Screen No. 1-1			
CSC2	Green Screen No. 1-2			
CSC3	Green Screen No. 1-3			
CVF1	Crusher Vibrating Feeder			
CRG2	CRG Roll Crusher			
OBC1	Oversize Collection Belt Conveyor No. 1			
ORB1	Oversize Surge Bin No. 1			
RSH1	Rescreen Surge Hopper			
UVC1	Unders Collection Vibratory Conveyor No. 1			
URC1	Under Reversible Belt Conveyor No. 1			
KFE1	Kiln No. 1 CRG Feed Bin Bucket Elevator			
KRE1	Kiln #1 Recycle Feed Bin B Elevator			
KC1	Kiln No. 1 CRG Crusher			
AVC1	Accepts Vibratory Conveyor No. 1			
WBF1	Kiln No. 1 CRG Weigh Belt Feeder No. 1	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	GPB2	Baghouse
WBF2	Kiln No. 1 CRG Weigh Belt Feeder No. 2			

KFB1	Kiln No. 1 CRG Feed Bin No. 1			
KRB1	Kiln No. 1 CRG Refire Bin			
KFC1	Kiln #1 Feed Conveyor			
KFB2	Kiln No. 1 Cristobalite Feed Bin No. 1			
KRB2	Kiln No. 1 Cristobalite Feed Bin No. 2			
KRE2	Kiln No. 1 Cristobalite Feed Bucket Elevator			
KFC2	Kiln No. 1 Cristobalite Silo Conveyor			
KM2	Kiln No. 1 Cristobalite Mixer Feed Conveyor			
KM3	Kiln No. 1 Cristobalite Flux Mixer			
WBF3	Kiln No. 1 Cristobalite Weigh Belt Feeder No. 1			
WBF4	Kiln No. 1 Cristobalite Weigh Belt Feeder No. 2			
206-BCV-835*	**Raw Sand Transfer Conveyor**			
206-BCV-855*	**Raw Sand Feed Belt Conveyor 1**			
206-BCV-860*	**Raw Sand Feed Belt Conveyor 2**			
KCE1	Kiln No. 1 CRG Cooler Bucket Elevator	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	KNB1	Baghouse
KPS1	Kiln No. 1 CRG Product Screen			
KQC1	Kiln No. 1 Product QC Bin A			
KQC2	Kiln No. 1 Product QC Bin B			
KCE2	Kiln No. 1 Cristobalite Cooler Bucket Elevator	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	**KNB2**	Baghouse
KPS2	Kiln No. 1 Cristobalite Product Screen			

KQC5	Kiln No. 1 Cristobalite Product QC Bin A			
KQC6	Kiln No. 1 Cristobalite Product QC Bin B			
KCS3	Kiln No. 1 Cristobalite Product Screen DPCS			
KCS4	Kiln No. 1 Cristobalite Fines Screen DPCS			
COSC1	Crossover Screw Conveyor			
BLR1	Boiler No. 1	391-3-1-.02(2)(d) 391-3-1-.02(2)(d) 40 CFR 63, Subpart DDDDD 112(g) case-by-case MACT, 40 CFR 63, Subpart B	N/A	N/A
EDG1	Emergency Generator No.1	391-3-1-.03(6)(b)(v)(11)(1) 40 CFR 63, Subpart ZZZZ	N/A	N/A
EDG2	Emergency Generator No.2	40 CFR 60, Subpart IIII		
TL1	Truck Loadout No. 1	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	PLB1	Baghouse
KLE1	Kiln No. 1 Loadout Belt/Bucket Elevator			
KLC1	Kiln No. 1 CRG Loadout Conveyor			
KLC2	Kiln No. 1 Cristobalite Loadout Conveyor No. 1			
KLC3	Kiln No. 1 Cristobalite Loadout Conveyor No. 2			
BS11	Bulk CRG Product Silo 1-1	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	BB11	Bin Vent Filter
BS12	Bulk CRG Product Silo 1-2		BB12	Bin Vent Filter
BS13	Bulk CRG Product Silo 1-3		BB13	Bin Vent Filter
BS14	Bulk CRG Product Silo 1-4		BB14	Bin Vent Filter
BS21	Bulk Cristobalite Product Silo 1-1	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	BB21	Bin Vent Filter
BS22	Bulk Cristobalite Product Silo 1-2		BB22	Bin Vent Filter
BS23	Bulk Cristobalite Product Silo 1-3		BB23	Bin Vent Filter
BS24	Bulk Cristobalite		BB24	Bin Vent Filter

	Product Silo 1-4			
AS01	PVA Silo No. 1	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	AB01	Bin Vent Filter
KS2	Kiln No. 1 Cristobalite Silo	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	CSB1	Bin Vent Filter
206-SIL-840*	**Raw Sand Silo 2**			
STR	Sand Truck Receiving	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	N/A	N/A
KTR1	Kiln No. 1 Cristobalite Truck Receiving Conveyor	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	N/A	N/A
KSBE1	Kiln No. 1 Cristobalite Silo Bucket Elevator	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	N/A	N/A
KQC3	Kiln No. 1 QC Bin Conveyor	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	CDB1	Baghouse
MBE1	Mixing Bucket Elevator			
KM1	Kiln No. 1 CRG Mixer			
KB1	Kiln No. 1 CRG Binder			
KBBE1	Kiln No. 1 Bagging Bucket Elevator No. 1	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(n) 391-3-1-.02(2)(p)1 40 CFR 60, Subpart OOO	PSB1	Baghouse
KSB1	Kiln No. 1 CRG Storage Bin No. 1			
CSS1	Coating Dryer Scalping Screen			
KBBE2	Kiln No. 1 Bagging Bucket Elevator No. 2			
KSB2	Kiln No. 1 CRG Storage Bin No. 2			

*** New equipment to be constructed with this project.**

* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards and corresponding permit conditions are intended as a compliance tool and may not be definitive.

In the above table the new equipment is shown in bold font. Baghouses that have been renamed are also shown in bold font.

C. Equipment & Rule Applicability

The rules and regulations that apply to the existing Sand silo and the conveyors also apply to the new Sand silo and the new conveyors.

- Applicable Rules and Regulations -
  - Rules and Regulations Assessment: 40 CFR 63 Subpart OOO – "Standards of Performance for Nonmetallic Mineral Processing Plants". This NSPS applies to the proposed Sand silo. Pursuant to 40 CFR 60.672(a-b), Fugitive emissions are limited to 7 percent opacity except for any crusher that does not use a capture system, which shall not exhibit fugitive emissions greater than 12 percent opacity. Stack emissions from capture systems feeding a dry control device which contain particulate matter in excess of 0.032 g/dscm (0.014 grains/dscf) except for individually enclosed storage bins.

    For any transfer point on a conveyor belt or any other affected facility enclosed in a building, each enclosed affected facility shall comply with the emission limits in 40 CFR 60.672 paragraphs (a) and (b), or the building shall comply with the following emission limits:

  - Fugitive emissions from the building openings (except vents with mechanically induced air flow exhausting PM emissions from the building) shall not exceed 7 percent opacity.
  - PM emissions from any building vent with mechanically induced air flow for exhausting PM emissions shall not contain particulate matter in excess of 0.032 g/dscm (0.014 grains/dscf).
  - Per 40 CFR 60.672(d), truck dumping operations into any screening operation, feed hopper, or crusher are exempt from the requirements of this condition. Additionally, any dry control device that controls emissions from an individually enclosed storage bin is exempt from the stack PM concentration limit (and associated performance testing) but shall not exhibit greater than 7 percent opacity, per 40 CFR 60.672(f).
  - The proposed Raw Sand Silo 2 (206-SIL-840) will also meet this description and will be required to meet the 7 percent opacity limit.
  - All other applicable crushers, screening operations, bucket elevator, belt conveyors, bagging operations, storage bins, and enclosed truck loading stations are required to limit PM emissions to 0.014 grains/dscf, perform initial performance testing, and follow baghouse monitoring requirements.
  - The proposed project will not result in a change in fugitive or PM emissions. The facility will continue to comply with all applicable Subpart OOO standards.

    The proposed modification will not change the applicability of the NSPS Subpart UUU - – Standards of Performance for Calciners and Dryers in Mineral Industries.

Currently U.S. Silica is subject to limitations on hydrogen chloride (HCI) and hydrogen fluoride (HF) emissions from the Kiln and methanol emissions from the Spray Dryers for compliance with MACT requirements.

The proposed project, which involves constructing and modifying equipment, will not result in additional HAP emissions; therefore, HAP emissions increases will not exceed major source thresholds. Thus, the proposed project does not constitute construction as defined in 40 CFR 63.41. Furthermore, the proposed changes to the facility design do not constitute reconstruction of a major source per 40 CFR 63.41. The fixed capital costs associated with the new equipment, i.e. silo and conveyors, are significantly less than 50 percent of the fixed capital costs that would be required to construct a comparable new facility.

The proposed project does not trigger a requirement to perform a new case-by-case MACT evaluation under Section 112(g), as the project does not constitute construction of a greenfield major source or reconstruction of the process or production unit. The facility is not requesting any modifications to the existing MACT emission limits for these process sources as the estimated emissions are predicted to be less than the allowable emissions.

The facility has previously demonstrated compliance with the AACs, will not be modifying existing equipment that increases TAP emissions, and will not be emitting any additional previously unmodeled TAPs as part of this project. Therefore, a Toxic Impact Assessment is not required for the proposed project/modification.

The proposed conveyors will be enclosed to limit fugitive dust. Emissions from the new silo and associated conveyor equipment will be routed to an existing bin vent and baghouse, respectively, for particulate control. The facility will continue to comply with the requirements of Georgia Rule (n).

D. Permit Conditions

No new permit conditions are added in this permit amendment.

V. Testing Requirements (with Associated Record Keeping and Reporting)

Not applicable.

VI. Monitoring Requirements (with Associated Record Keeping and Reporting)

Not applicable.

VII. Other Record Keeping and Reporting Requirements

Not applicable.

VIII. Specific Requirements

Not applicable.

Addendum to Narrative

The 45-day EPA review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//